

Sequence listing

<120> METHOD AND DETECTOR FOR IDENTIFYING SUBTYPES OF HUMAN
PAPILLOMA VIRUSES

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<400> SEQUENCE: 122

ggatgctcca gcacctgaa

19

<210> SEQ ID NO 123
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<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 123

atatgacggt ctaaag

16

<210> SEQ ID NO 124
<211> LENGTH: 22
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 124

tatatgttgg ggaaatcagc ta

22

<210> SEQ ID NO 125
<211> LENGTH: 20
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<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 125

cactgcaaca tctggtgata

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<210> SEQ ID NO 126

<211> LENGTH: 30

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 126

gcaacatctg gtgatacata tacagctgct

30 ..

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<211> LENGTH: 23

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 127

cattaactgt tgaagttatg tca

23

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<211> LENGTH: 26

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 128

cctaacatat tagaggagtg gaatgt

26

<210> SEQ ID NO 129

<211> LENGTH: 20

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 129

caccaccacc ttacaggaact

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<211> LENGTH: 24

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 130

gttataggta tgtacaatca gaag

24

<210> SEQ ID NO 131

<211> LENGTH: 30

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 131

gctaaggtaa caacgccaga aaaaaaggat

30

<210> SEQ ID NO 132

<211> LENGTH: 24

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 132

cagacttttg gttttgggag gtaa

24

<210> SEQ ID NO 133

<211> LENGTH: 21

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 133

gaaaagtttt ctactgattt a

21

<210> SEQ ID NO 134

<211> LENGTH: 22

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 134

catttgtttt gggaatcagt tg

22

<210> SEQ ID NO 135

<211> LENGTH: 20

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 135

tgaccctact gtgcccagta

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<211> LENGTH: 30

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 136

actgtgccca gtacatatga caatgcaaag

30

<210> SEQ ID NO 137
<211> LENGTH: 23
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 137

gtttatattt caattatgca taa

23

<210> SEQ ID NO 138
<211> LENGTH: 21
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 138

ccagaggtta tgacatatat t

21

<210> SEQ ID NO 139
<211> LENGTH: 23
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<400> SEQUENCE: 139

cccacattat tagaggactg gaa

23

<210> SEQ ID NO 140
<211> LENGTH: 21
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<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 140

ccacctgcct ctgcttcttt g

21

<210> SEQ ID NO 141
<211> LENGTH: 25
<212> TYPE: DNA
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<400> SEQUENCE: 141

cgctttttgt ctaacaaggc cattg

25

<210> SEQ ID NO 142
<211> LENGTH: 23
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<400> SEQUENCE: 142

ccaaaggaac gggaggatcc cta

23

<210> SEQ ID NO 143
<211> LENGTH: 25
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<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 143

cttacagaaa agttttctgc acaac

25

<210> SEQ ID NO 144
<211> LENGTH: 15
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 144

tgccactaca cagtc

15

<210> SEQ ID NO 145

<211> LENGTH: 20

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 145

ctacacagtc cctccgtct

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<210> SEQ ID NO 146

<211> LENGTH: 20

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 146

tgccactaca cagtcacctc

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<210> SEQ ID NO 147

<211> LENGTH: 22

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 147

cagtcacctc cgtctacata ta

22

<210> SEQ ID NO 148

<211> LENGTH: 20

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 148

ctacatatat tagtgaacaa

20

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<211> LENGTH: 23

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 149

tagtattacc ttaacggcgg agg

23

<210> SEQ ID NO 150

<211> LENGTH: 19

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 150

tgctggtatt ttagaacag

19

<210> SEQ ID NO 151

<211> LENGTH: 26

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 151

gttgctgccg cccccaaatg gtacct

26

<210> SEQ ID NO 152

<211> LENGTH: 22

<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 152

atacagatat gtgcagtc cc ag 22

<210> SEQ ID NO 153
<211> LENGTH: 19
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 153

gccaccccct gaaaaggca 19

<210> SEQ ID NO 154
<211> LENGTH: 16
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 154

ctatgcaaaa ttaagt 16

<210> SEQ ID NO 155
<211> LENGTH: 20
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 155

tgccctctaca caaaatcctg 20

<210> SEQ ID NO 156
<211> LENGTH: 15
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<400> SEQUENCE: 156

ctctacacaa aatcc

15

<210> SEQ ID NO 157
<211> LENGTH: 20
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<400> SEQUENCE: 157

acaaaatcct gtgccaagta

20

<210> SEQ ID NO 158
<211> LENGTH: 20
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<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 158

caaaatcctg tgccaagtac

20

<210> SEQ ID NO 159
<211> LENGTH: 22
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<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 159

aatcctgtgc caagtacata tg

22

<210> SEQ ID NO 160
<211> LENGTH: 20
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<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 160

gtacatatga ccctactaag

20

<210> SEQ ID NO 161
<211> LENGTH: 23
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<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 161

cactattact ttaactgcag agg

23

<210> SEQ ID NO 162
<211> LENGTH: 19
<212> TYPE: DNA
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<400> SEQUENCE: 162

tagtagtata ttagaaaat

19

<210> SEQ ID NO 163
<211> LENGTH: 26
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 163

tgtccctcca ccacctacta caagtt

26

<210> SEQ ID NO 164

<211> LENGTH: 22

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 164

atatcgtttt gtgcaatcag tt

22..

<210> SEQ ID NO 165

<211> LENGTH: 19

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 165

ggatactaca cctccagaa

19

<210> SEQ ID NO 166

<211> LENGTH: 20

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 166

cactgccact gctgcggttt

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<210> SEQ ID NO 167

<211> LENGTH: 15

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 167

tgccactgct gcggt

15

<210> SEQ ID NO 168

<211> LENGTH: 20

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 168

cactgctgcg gtttcccaa

20

<210> SEQ ID NO 169

<211> LENGTH: 20

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 169

ccactgctgc ggtttcccca

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<210> SEQ ID NO 170

<211> LENGTH: 22

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 170

ctgcggtttc cccaacattt ac

22

<210> SEQ ID NO 171

<211> LENGTH: 20

<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 171

caacatttac tccaagtaac 20

<210> SEQ ID NO 172
<211> LENGTH: 23
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 172

taaaattact ttaactacag agg 23

<210> SEQ ID NO 173
<211> LENGTH: 19
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<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 173

tcctaccatt cttgaacag 19

<210> SEQ ID NO 174
<211> LENGTH: 26
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 174

attaacatta cctccgtctg ctagtt 26

<210> SEQ ID NO 175
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<400> SEQUENCE: 175

atatagggttt gttagaaatg ca 22

<210> SEQ ID NO 176
<211> LENGTH: 19
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 176

ggacacccct ccacaggct 19

<210> SEQ ID NO 177
<211> LENGTH: 16
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 177

tttggccaaa tataaa 16

<210> SEQ ID NO 178
<211> LENGTH: 15
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 178

tgagg ttaaa aagga 15

<210> SEQ ID NO 179
<211> LENGTH: 20
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 179

tgagggttaaa aaggaaagca 20

<210> SEQ ID NO 180
<211> LENGTH: 20
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 180

gagggttaaaa aggaaagcac 20

<210> SEQ ID NO 181
<211> LENGTH: 20
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<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 181

ttaaaaagga aagcacatat 20

<210> SEQ ID NO 182
<211> LENGTH: 22
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 182

aaaggaaagc acatataaaa at

22

<210> SEQ ID NO 183

<211> LENGTH: 20

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 183

gcacatatataa aaatgaaaat

20

<210> SEQ ID NO 184

<211> LENGTH: 23

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 184

caaaattaca ttaacagctg atg

23

<210> SEQ ID NO 185

<211> LENGTH: 19

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 185

tgccactatt ttagaggac

19

<210> SEQ ID NO 186

<211> LENGTH: 26

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 186

ccttacccca ccaccgtctg catctt

26

<210> SEQ ID NO 187

<211> LENGTH: 22

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 187

atacagattt gtcacttcta ct

22

<210> SEQ ID NO 188

<211> LENGTH: 19

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 188

aaacacacca cctaaagga

19

<210> SEQ ID NO 189

<211> LENGTH: 16

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<400> SEQUENCE: 189

tttaaaggac tatatg

16

<210> SEQ ID NO 190

<211> LENGTH: 20

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 190

tccgcaacca cacagtctat

20

<210> SEQ ID NO 191

<211> LENGTH: 15

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 191

ccgcaaccac acagt

15

<210> SEQ ID NO 192

<211> LENGTH: 20

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 192

ccgcaaccac acagtctatg

20

<210> SEQ ID NO 193

<211> LENGTH: 22

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 193

cacagtctat gtctacatat aa

22

<210> SEQ ID NO 194
<211> LENGTH: 20
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 194

ctacatatataa ttcaaagcaa 20

<210> SEQ ID NO 195
<211> LENGTH: 23
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 195

taaaatatcc ctgtctgctg agg 23

<210> SEQ ID NO 196
<211> LENGTH: 19
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 196

ttctacctta ctggaagac 19

<210> SEQ ID NO 197
<211> LENGTH: 26
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 197

tttgtcgcct cctgttgcca ctagct 26

<210> SEQ ID NO 198
<211> LENGTH: 22
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<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 198

atacagatat gtgaaaagtg ca

22

<210> SEQ ID NO 199
<211> LENGTH: 19
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 199

ggatcagccc cctcctgaa

19

<210> SEQ ID NO 200
<211> LENGTH: 15
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 200

tacagcatcc acgca

15

<210> SEQ ID NO 201
<211> LENGTH: 20
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 201

cagcatccac gcaggatagc 20

<210> SEQ ID NO 202
<211> LENGTH: 20
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 202

acgcaggata gctttaataa 20

<210> SEQ ID NO 203
<211> LENGTH: 20
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 203

cacgcaggat agctttaata 20

<210> SEQ ID NO 204
<211> LENGTH: 20
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 204

atagctttaa taattctgac 20

<210> SEQ ID NO 205
<211> LENGTH: 23
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 205

taccataacc cttacagcag atg

23

<210> SEQ ID NO 206

<211> LENGTH: 19

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 206

tcccactatt ctagaggac

19

<210> SEQ ID NO 207

<211> LENGTH: 26

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 207

tataaccccc ccagctacaa gtagtt

26

<210> SEQ ID NO 208

<211> LENGTH: 22

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 208

atatagggttt gtacagtcac ag

22

<210> SEQ ID NO 209

<211> LENGTH: 22

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 209

gaataatgcc cctgcaaagg aa

22

<210> SEQ ID NO 210

<211> LENGTH: 23

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 210

tttgttactg ttgtagatac tac

23

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<212> TYPE: DNA

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<211> LENGTH: 20

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 212

gacaatatgt gctgctacaa

20

<210> SEQ ID NO 213
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<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 213

tgctacaact cagtctccat

20

<210> SEQ ID NO 214
<211> LENGTH: 20
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 214

ctacaactca gtctccatct

20

<210> SEQ ID NO 215
<211> LENGTH: 20
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 215

acaactcagt ctccatctac

20

<210> SEQ ID NO 216
<211> LENGTH: 20
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 216

atgttgagga gtttgactta

20

<210> SEQ ID NO 217
<211> LENGTH: 20
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 217

tgttgaggag ttgacttac 20

<210> SEQ ID NO 218
<211> LENGTH: 20
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 218

tgaggagttt gacttacagt 20

<210> SEQ ID NO 219
<211> LENGTH: 15
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 219

ctgctacaga acagt 15

<210> SEQ ID NO 220
<211> LENGTH: 20
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 220

gctacagaac agttaagtaa

20

<210> SEQ ID NO 221

<211> LENGTH: 20

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 221

cagaacagtt aagtaaatat

20

<210> SEQ ID NO 222

<211> LENGTH: 23

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 222

gaacagttaa gttaaataatga tgc

23

<210> SEQ ID NO 223

<211> LENGTH: 20

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 223

gtaaatatga tgcacgaaaa

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<210> SEQ ID NO 224

<211> LENGTH: 23

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 224

caaaattact ttgtctgcag agg

23

<210> SEQ ID NO 225

<211> LENGTH: 19

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 225

tgctaaccta ctggaggac

19

<210> SEQ ID NO 226

<211> LENGTH: 26

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 226

gttatccccg ccagtggcca ccagcc

26

<210> SEQ ID NO 227

<211> LENGTH: 22

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 227

atatagatat gttagaagca ca

22

<210> SEQ ID NO 228

<211> LENGTH: 19

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 228

ggaacagcca ccaacagaa

19

<210> SEQ ID NO 229

<211> LENGTH: 20

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 229

atgcactgaa gtaactaagg

20

<210> SEQ ID NO 230

<211> LENGTH: 20

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 230

cactgaagta actaaggaag

20

<210> SEQ ID NO 231

<211> LENGTH: 15

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 231

tgaagtaact aagga

15

<210> SEQ ID NO 232
<211> LENGTH: 20
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 232

gaagtaacta aggaaggtag 20

<210> SEQ ID NO 233
<211> LENGTH: 22
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 233

ctaaggaagg tacatataaa aa 22

<210> SEQ ID NO 234
<211> LENGTH: 20
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<400> SEQUENCE: 234

ataaaaatga taattttaag 20

<210> SEQ ID NO 235
<211> LENGTH: 23
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 235

caaaattaca ctaactgcag aga 23

<210> SEQ ID NO 236
<211> LENGTH: 19
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 236

ttccaatatt ttggaggac

19

<210> SEQ ID NO 237
<211> LENGTH: 26
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 237

tttaacacct cctccgtctg ccagtt

26

<210> SEQ ID NO 238
<211> LENGTH: 22
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 238

atatagattt gttacctccc ag

22

<210> SEQ ID NO 239
<211> LENGTH: 19
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 239

aacagcacccccctaaagaa

19

<210> SEQ ID NO 240

<211> LENGTH: 15

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 240

ttctactact tcttc

15

<210> SEQ ID NO 241

<211> LENGTH: 20

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 241

actacttctt ctattcctaa

20

<210> SEQ ID NO 242

<211> LENGTH: 20

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 242

acttcttcta ttccctaatgt

20

<210> SEQ ID NO 243

<211> LENGTH: 23

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 243

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23

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ctgctacatc ccccc 15

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acatcccccc ctgtatctga 20

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26

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22

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16

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taatacttta ttagacgat

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<400> SEQUENCE: 282

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15

<210> SEQ ID NO 285

<211> LENGTH: 20

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<400> SEQUENCE: 285

gaggaaaaat cagaggctac

20

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atcagaggct acatacaaaa atg

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<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 287

aggaaaaatc agaggctaca

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23

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22

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<400> SEQUENCE: 294

tcttaaaaag tacagt

16

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<400> SEQUENCE: 295

ctactactga atcag

15

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<400> SEQUENCE: 296

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<400> SEQUENCE: 299

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<212> TYPE: DNA

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<400> SEQUENCE: 300

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<212> TYPE: DNA

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<211> LENGTH: 26

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26

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<211> LENGTH: 22

<212> TYPE: DNA

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<400> SEQUENCE: 303

ataccgctat ctgcaatcag ca

22

<210> SEQ ID NO 304

<211> LENGTH: 19

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 304

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<210> SEQ ID NO 305

<211> LENGTH: 16

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 305

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16

<210> SEQ ID NO 306

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<400> SEQUENCE: 306

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<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 307

ctgtatctgc acaat

15

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ccacttttaa accatcagat 20

<210> SEQ ID NO 312
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<400> SEQUENCE: 312

taaaattact cttaccactg atg

23

<210> SEQ ID NO 313
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<400> SEQUENCE: 313

ttctactatt ttggaaaat

19

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<212> TYPE: DNA
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<400> SEQUENCE: 314

ccttaccttg cctcctactg ctagtt

26

<210> SEQ ID NO 315
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<400> SEQUENCE: 315

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22

<210> SEQ ID NO 316

<211> LENGTH: 19

<212> TYPE: DNA

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<210> SEQ ID NO 317

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<400> SEQUENCE: 317

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<400> SEQUENCE: 318

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<210> SEQ ID NO 319

<211> LENGTH: 20

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 319

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<210> SEQ ID NO 320

<211> LENGTH: 20

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 320

cgaaacggcc atacctgctg

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<211> LENGTH: 22

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<400> SEQUENCE: 321

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22

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<400> SEQUENCE: 322

ctgtatatag ccctacaaag

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<400> SEQUENCE: 323

tactatcaca ttaactgctg acg

23

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<211> LENGTH: 19

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 324

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19

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<211> LENGTH: 26

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 325

agttaccct ccaccatctg caagct

26

<210> SEQ ID NO 326

<211> LENGTH: 22

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 326

gtataggtat ttacaatcag ca

22

<210> SEQ ID NO 327
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<400> SEQUENCE: 327

ggatgctcct acacctgaa 19

<210> SEQ ID NO 328
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<400> SEQUENCE: 328

ctatgacgat ttaaaa 16

<210> SEQ ID NO 329
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<400> SEQUENCE: 329

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<210> SEQ ID NO 330
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<400> SEQUENCE: 330

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<210> SEQ ID NO 331
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<400> SEQUENCE: 331

ctgccacagc gtcct 15

<210> SEQ ID NO 332
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<400> SEQUENCE: 332

acagcgtcct ctgtatcaga 20

<210> SEQ ID NO 333
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<400> SEQUENCE: 333

ccacagcgtc ctctgtatca 20

<210> SEQ ID NO 334
<211> LENGTH: 22
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<400> SEQUENCE: 334

agcgtcctct gtatcagaat at

22

<210> SEQ ID NO 335

<211> LENGTH: 20

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<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 335

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<210> SEQ ID NO 336

<211> LENGTH: 23

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 336

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23

<210> SEQ ID NO 337

<211> LENGTH: 19

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 337

taaggcctta ttggatgac

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<212> TYPE: DNA

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<400> SEQUENCE: 338

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22

<210> SEQ ID NO 341

<211> LENGTH: 16

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 341

atatgctaac ttatcc

16

<210> SEQ ID NO 342

<211> LENGTH: 15

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 342

cctacctcac aatcg

15

<210> SEQ ID NO 343

<211> LENGTH: 20

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 343

ctcacaatcg cttctgcta

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<211> LENGTH: 20

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

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acctcacaat cgccttctgc

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<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 345

caatcgcctt ctgctacata ta

22

<210> SEQ ID NO 346
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<400> SEQUENCE: 346

acaatcgcct tctgctacat at 22

<210> SEQ ID NO 347
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<400> SEQUENCE: 347

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<210> SEQ ID NO 348
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<400> SEQUENCE: 348

tagtattaag ttaactgctg agg 23

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<400> SEQUENCE: 349

tcctacagtt ttagaagag 19

<210> SEQ ID NO 350
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<400> SEQUENCE: 350

gctaacgcct ccccccaatg gtactt

26

<210> SEQ ID NO 351
<211> LENGTH: 22
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<400> SEQUENCE: 351

ctacagatat gtgcagtccc ag

22

<210> SEQ ID NO 352
<211> LENGTH: 19
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<400> SEQUENCE: 352

acctacgcct gataaagca

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<210> SEQ ID NO 353
<211> LENGTH: 16
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<400> SEQUENCE: 353

ctatgcaaatttaagt

16

<210> SEQ ID NO 354

<211> LENGTH: 15

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 354

tgctgttactccatc

15

<210> SEQ ID NO 355

<211> LENGTH: 20

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<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 355

tgctgttactccatctgttg

20

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<212> TYPE: DNA

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actccatctgttgcacaaac

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<211> LENGTH: 20

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 357

aaacatttac tccagcaaac

20

<210> SEQ ID NO 358

<211> LENGTH: 23

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 358

taaaatcact ttaactactg aaa

23

<210> SEQ ID NO 359

<211> LENGTH: 19

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 359

ttctacaatt ttagaacag

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<210> SEQ ID NO 360

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<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 360

attaacattg cccccctccg ctagtt

26

<210> SEQ ID NO 361

<211> LENGTH: 22

<212> TYPE: DNA
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<400> SEQUENCE: 361

ctatcgattt gtaaaaaatg ca 22

<210> SEQ ID NO 362
<211> LENGTH: 19
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<400> SEQUENCE: 362

ggacagtcct ccacaggct 19

<210> SEQ ID NO 363
<211> LENGTH: 20
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<400> SEQUENCE: 363

tctgtgctac caaaactggt 20

<210> SEQ ID NO 364
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<400> SEQUENCE: 364

ctaccaaaac tgttg 15

<210> SEQ ID NO 365
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<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 365

accaaaactg ttgagtctac 20

<210> SEQ ID NO 366
<211> LENGTH: 22
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 366

aactgttgag tctacatata aa 22

<210> SEQ ID NO 367
<211> LENGTH: 20
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 367

gttgagtcta catataaagc 20

<210> SEQ ID NO 368
<211> LENGTH: 20
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 368

ctacatataa agcctctagt 20

<210> SEQ ID NO 369
<211> LENGTH: 23
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 369

tgttattaat ttaacagctg aaa

23

<210> SEQ ID NO 370
<211> LENGTH: 19
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 370

tgctacatta ctggaggac

19

<210> SEQ ID NO 371
<211> LENGTH: 20
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 371

gttcctacca cctcctactg

20

<210> SEQ ID NO 372
<211> LENGTH: 22
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 372

ctaccgcttt ttacagtctc ag

22

<210> SEQ ID NO 373

<211> LENGTH: 22

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 373

aaacagtcct cctcctgcag aa

22

<210> SEQ ID NO 374

<211> LENGTH: 16

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 374

ctatgcagat cttaca

16

<210> SEQ ID NO 375

<211> LENGTH: 15

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 375

cagctacatc tgctg

15

<210> SEQ ID NO 376

<211> LENGTH: 20

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 376

gctacatctg ctgctgcaga

20

<210> SEQ ID NO 377

<211> LENGTH: 22

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 377

acatctgctg ctgcagaata ca

22

<210> SEQ ID NO 378

<211> LENGTH: 20

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 378

tgctgcagaa tacaaggcct

20

<210> SEQ ID NO 379

<211> LENGTH: 20

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 379

gctgcagaat acaaggcctc

20

<210> SEQ ID NO 380

<211> LENGTH: 20

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 380

cagaatacaa ggcctctaac

20

<210> SEQ ID NO 381

<211> LENGTH: 23

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 381

taaaatacag ttaacaccag aaa

23

<210> SEQ ID NO 382

<211> LENGTH: 19

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 382

caaggcactg ttggatgat

19

<210> SEQ ID NO 383

<211> LENGTH: 26

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 383

tgtgttgcca cctccttcca ccagtt

26

<210> SEQ ID NO 384
<211> LENGTH: 22
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 384

atatcgcttt ttacagtctc gg 22

<210> SEQ ID NO 385
<211> LENGTH: 22
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 385

gggtgctgct gccccgcgcc cc 22

<210> SEQ ID NO 386
<211> LENGTH: 16
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 386

ttatgccgac atgtca 16

<210> SEQ ID NO 387
<211> LENGTH: 20
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 387

atctactgca actactaatc 20

<210> SEQ ID NO 388
<211> LENGTH: 15
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 388

ctgcaactac taatc 15

<210> SEQ ID NO 389
<211> LENGTH: 20
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 389

ctgcaactac taatccagtt 20

<210> SEQ ID NO 390
<211> LENGTH: 22
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 390

actactaatc cagttccatc ta 22

<210> SEQ ID NO 391
<211> LENGTH: 20
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 391

ctaattccagt tccatctata

20

<210> SEQ ID NO 392

<211> LENGTH: 20

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 392

ctatatatga accttctaaa

20

<210> SEQ ID NO 393

<211> LENGTH: 23

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 393

taaaattaca cttactactg atg

23

<210> SEQ ID NO 394

<211> LENGTH: 19

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 394

tcctactatt ttagatagt

19

<210> SEQ ID NO 395

<211> LENGTH: 26

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 395

tgtagtcct ccccatctg ctagct 26

<210> SEQ ID NO 396

<211> LENGTH: 22

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 396

atataggttt ttacagtcac ct 22

<210> SEQ ID NO 397

<211> LENGTH: 19

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 397

ggatgtgggtt gttccacaa 19

<210> SEQ ID NO 398

<211> LENGTH: 20

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 398

ctgctgttac tcaatctgtt 20

<210> SEQ ID NO 399

<211> LENGTH: 15

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 399

tgctgttact caatc

15

<210> SEQ ID NO 400

<211> LENGTH: 20

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 400

gttactcaat ctgttgca

20

<210> SEQ ID NO 401

<211> LENGTH: 20

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 401

tgcacaaaca ttactccag

20

<210> SEQ ID NO 402

<211> LENGTH: 22

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 402

ttactcaatc tgttgcaaa ac

22

<210> SEQ ID NO 403
<211> LENGTH: 20
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 403

aaacatttac tccagcaaac 20

<210> SEQ ID NO 404
<211> LENGTH: 23
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 404

taaaatcact ttaactactg aaa 23

<210> SEQ ID NO 405
<211> LENGTH: 19
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 405

ttctacaatt ttagaacag 19

<210> SEQ ID NO 406
<211> LENGTH: 26
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 406

attaaccttg cccccctcag ctagtt 26

<210> SEQ ID NO 407
<211> LENGTH: 22
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 407

ctatcgattt gtaaaaaatg ca

22

<210> SEQ ID NO 408
<211> LENGTH: 19
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 408

ggacagtcct ccacaggct

19

<210> SEQ ID NO 409
<211> LENGTH: 15
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 409

tgctgctaca caggc

15

<210> SEQ ID NO 410
<211> LENGTH: 20
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 410

gctgctacac aggctaata

20

<210> SEQ ID NO 411

<211> LENGTH: 20

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 411

tgctacacag gctaata

20

<210> SEQ ID NO 412

<211> LENGTH: 22

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 412

ctacacaggc taataac ac

22

<210> SEQ ID NO 413

<211> LENGTH: 20

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 413

atgaatacac agccttaac

20

<210> SEQ ID NO 414

<211> LENGTH: 23

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 414

caaaatacat cttacccctg aaa

23

<210> SEQ ID NO 415

<211> LENGTH: 19

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 415

tgaacattta ttggatgag

19

<210> SEQ ID NO 416

<211> LENGTH: 26

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 416

cgtgttacca cctccttcca ccagcc

26

<210> SEQ ID NO 417

<211> LENGTH: 22

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 417

ctatcgctat ctgcagtc cc gt

22

<210> SEQ ID NO 418

<211> LENGTH: 22

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 418

gggtccttcc gccccctgccc ct

22

<210> SEQ ID NO 419

<211> LENGTH: 16

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 419

ttatgatggc cttgta

16

<210> SEQ ID NO 420

<211> LENGTH: 15

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 420

tgctaccaac accga

15

<210> SEQ ID NO 421

<211> LENGTH: 20

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 421

ctaccaacac cgaatcagaa

20

<210> SEQ ID NO 422
<211> LENGTH: 22
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 422

ccaacaccga atcagaatat aa 22

<210> SEQ ID NO 423
<211> LENGTH: 20
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 423

cagaatataa acctaccaat 20

<210> SEQ ID NO 424
<211> LENGTH: 23
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 424

taagggtccgt ctgactccag agg 23

<210> SEQ ID NO 425
<211> LENGTH: 19
<212> TYPE: DNA
<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 425

tgactcctta ttagatgag 19

<210> SEQ ID NO 426

<211> LENGTH: 26

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 426

tgttgtgccc cctccctcca caagtt

26

<210> SEQ ID NO 427

<211> LENGTH: 22

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 427

ctataggtac ttgcagtctc gc

22

<210> SEQ ID NO 428

<211> LENGTH: 22

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 428

ggggggccgcc gccgccaagc ct

22

<210> SEQ ID NO 429

<211> LENGTH: 16

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus

<400> SEQUENCE: 429

ttatgctggc atgtcc

16

<210> SEQ ID NO 430

<211> LENGTH: 409

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype 6 (6743-7151/409 bp)

<400> SEQUENCE: 430

```
tatttgttgg ggtaatcaac tgtttggttac tgtggtagat accacacgca gtaccaacat 60
gacattatgt gcatccgtaa ctacatcttc cacatacacc aattctgatt ataaagagta 120
catgcgtcat gtggaagagt atgatttaca atttatTTTT caattatgta gcattacatt 180
gtctgttgaa gtaatggcct atattcacac aatgaatccc tctgttttgg aagactggaa 240
ctttgggtta tcgcctcccc caaatggtac attagaagat acctataggt atgtgcagtc 300
acaggccatt acctgtcaaa agcccactcc tgaaaaggaa aagccagatc cctataagaa 360
ccttagtttt tgggagggtta attttaaaga aaagttttct agtgaattg 409
```

<210> SEQ ID NO 431

<211> LENGTH: 409

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype 11 (6727-7135/409 bp)

<400> SEQUENCE: 431

```
tatttgcctgg ggaaaccact tgtttggttac tgtggtagat accacacgca gtacaaatat 60
gacactatgt gcatctgtgt ctaaattctgc tacatacact aattcagatt ataaggaata 120
catgcgccat gtggaggagt ttgatttaca gtttattttt caattgtgta gcattacatt 180
atctgcagaa gtcatggcct atatacacac aatgaatcct tctgttttgg aggactggaa 240
ctttgggtta tcgcctccac caaatggtac actggaggat acttatagat atgtacagtc 300
acaggccatt acctgtcaga aaccacaccc tgaaaaagaa aaacaggatc cctataagga 360
tatgagtttt tgggagggtta actttaaaga aaagttttca agtgaatta 409
```

<210> SEQ ID NO 432

<211> LENGTH: 412

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype 16 (6602-7013/412 bp)

<400> SEQUENCE: 432

```
catttggttg ggtaaccaac tatttggttac tgttggtgat actacacgca gtacaaatat 60
gtcattatgt gctgccatat ctacttcaga aactacatat aaaaatacta actttaagga 120
gtacctacga catggggagg aatatgattt acagtttatt ttccaactgt gcaaaaataac 180
cttaactgca gacgttatga catacataca ttctatgaat tccactatit tggaggactg 240
gaattttggt ctacaacctc ccccaggagg cacactagaa gatacttata ggtttgtaac 300
ccaggcaatt gcttgtcaaa aacatacacc tccagcacct aaagaagatg atccccctaa 360
aaaatacact ttttgggaag taaatttaaa ggaaaagttt tctgcagacc ta 412
```

<210> SEQ ID NO 433

<211> LENGTH: 415

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype 18 (6587-6992/415 bp)

<400> SEQUENCE: 433

```
tgtttgctgg cataatcaat tatttggttac tgtggtgat accactccca gtaccaattt 60
aacaatatgt gcttctacac agtctcctgt acctgggcaa tatgatgcta ccaaatttaa 120
gcagtatagc agacatgttg aggaatatga ttgacagttt atttttcagt tgtgtactat 180
tacttttaact gcagatgita tgcctatata tcatagtatg aatagcagta ttttagagga 240
ttggaacttt ggtgttcccc ccccccaaac tactagtttg gtggatacat atcgttttgt 300
acaatctgtt gctattacct gtcaaaagga tgctgcaccg gctgaaaata aggatcccta 360
tgataagtta aagttttgga atgtggattt aaaggaaaag ttttcttttag actta 415
```

<210> SEQ ID NO 434

<211> LENGTH: 415

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype 26 (6553-6967/415 bp)

<400> SEQUENCE: 434

```
tatctgttgg ggcaatcaat tgtttgttac ctgtgttgat accaccgcga gtactaacct 60
```

| | |
|---|-----|
| taccatttagt acattatctg cagcatctgc atccactcca tttaaacat ctgattataa | 120 |
| acaatttata agacatggcg aagaatatga attacaattt atatttcagt tgtgtaaaat | 180 |
| aacacttaca acagatgtta tggcttacat acatttaatg aatgcctcca tattggagga | 240 |
| ttggaatttt ggactaacct tacctcccac tgctagtttg gaagatgcct ataggtttat | 300 |
| taaaaactct gctactacct gtcagcgtaa cggccctcct gtgccaaagg aagatccitt | 360 |
| tcaaaaattt aaattttggg atgtagattt aaaagaaaaa ttttctattg atttg | 415 |

<210> SEQ ID NO 435

<211> LENGTH: 412

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype 31 (6520-6931/412 bp)

<400> SEQUENCE: 435

| | |
|---|-----|
| tatttgttgg ggcaatcagt tatttgttac tgttgtagat accacacgta gtaccaatat | 60 |
| gtctgtttgt gctgcaattg caaacagtga tactacattt aaaagtagta attttaaaga | 120 |
| gtatttaaga catggtgagg aatttgattt acaatttata tttcagttat gcaaaataac | 180 |
| attatctgca gacataatga catatattca cagtatgaat cctgctattt tggaagattg | 240 |
| gaattttgga ttgaccacac ctccctcagg ttctttggag gataacctata ggtttgcac | 300 |
| ctcacaggcc attacatgtc aaaaaactgc ccccaaaaag cccaaggaag atccatttaa | 360 |
| agattatgta ttttgggagg ttaattttaa agaaaagttt tctgcagatt ta | 412 |

<210> SEQ ID NO 436

<211> LENGTH: 409

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype 32 (6837-7245/409 bp)

<400> SEQUENCE: 436

| | |
|--|-----|
| tatatgttgg ggtaatcaag tgtttctaac tgttgtggat actaccgta gtactaacat | 60 |
| gactgttgtt gctactgtaa caactgaaga cacatacaag tctactaact ttaaggaata | 120 |
| tctacgccat gcagaggaat atgatataca gtttataatt caattgtgca aaattacatt | 180 |
| atctgtagag gttatgtcat atatccacac catgaatcct gacatactag acgattggaa | 240 |
| tgttgggtgta gctccaccgc cctctggtac tttagaagat agttatagat ttgtgcagtc | 300 |
| tcaggccata cgatgtcaag ctaaggtaac agcacctgaa aaaaaggatc ctttttctga | 360 |
| ctattcattt tgggaagtaa atttatctga aaagttttct agtgattta | 409 |

<210> SEQ ID NO 437

<211> LENGTH: 409

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype 33 (6559-6967/409 bp)

<400> SEQUENCE: 437

```
tatttgttgg ggcaatcagg tatttgttac tgtggttagat accactcgca gtactaatat 60
gacttttatgc acacaagtaa ctagtgacag tacatatataa aatgaaaatt ttaaagaata 120
tataagacat gttgaagaat atgatctaca gtttgttttt caactatgca aagttacctt 180
aactgcagaa gttatgacat atattcatgc tatgaatcca gatatttttag aagattggca 240
atttggtttta acacctcctc catctgctag ttacaggat acctataggt ttgttacctc 300
tcaggctatt acgtgtcaaa aaacagtacc tccaaaggaa aaggaagacc ccttaggtaa 360
atatacatitt tgggaagtgg atttaaagga aaaattttca gcagattta 409
```

<210> SEQ ID NO 438

<211> LENGTH: 412

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype 35 (6542-6953/412 bp)

<400> SEQUENCE: 438

```
tatttgttgg agtaaccaat tgtttgttac tgtagttagat acaaccgta gtacaaatat 60
gtctgtgtgt tctgctgtgt cttctagtga cagtacatat aaaaatgaca attttaagga 120
atatttaagg catggtgaag aatatgattt acagtttatt ttccagttat gtaaaataac 180
actaacagca gatgttatga catatattca tagtatgaac ccgtccattt tagaggattg 240
gaattttggc cttacaccac cgccttctgg taccttagag gacacatc gctatgtaac 300
atcacaggct gtaacttgtc aaaaaccag tgcacaaaaa cctaaagatg atccattaaa 360
aaattatact ttttgggagg ttgatttaaa ggaaaagttt tctgcagact ta 412
```

<210> SEQ ID NO 439

<211> LENGTH: 415

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype 37 (6711-7125/415 bp)

<400> SEQUENCE: 439

```
cattttatgg ggtaatcaaa tgtttatcac agttgctgat aatacacgga acacaaactt 60
ttctattagt gtgtctactg acaatggcga agttacagaa tataattctc aaacactcag 120
agaataccta agacatgttg aagaatacca gctttcaatt attttacaac ttgtgaaagt 180
tcctttaaag gctgagggtt taactcagat aaatgcaatg aattctggta tattggaaga 240
gtggcaatta ggatttgtac ctactccaga taattcagta catgaccttt ataggtacat 300
taattcaaag gctaccaagt gtcctgatgc agttgttgaa aaagaaaagg aagatccctt 360
tgcaaaatat acattttgga atgtagattt aactgaaaaa ttatcattgg attta 415
```

<210> SEQ ID NO 440

<211> LENGTH: 415

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype 39 (6605-7017/415 bp)

<400> SEQUENCE: 440

```
tatatgttgg cataatcaat tatttcttac tgttgtggac actaccgta gtaccaactt 60
tacattatct acctctatag agtcttccat accttctaca tatgatcctt ctaagtttaa 120
ggaatatacc aggcacgtgg aggagtatga ttacaattt atatttcaac tgtgtactgt 180
cacattaaca actgatgtta tgtcttatat tcacactatg aattcctcta tattggacaa 240
ttggaatttt gctgtagctc ctccaccatc tgccagtttg gtagacactt acagatacct 300
acagtctgca gccattacat gtcaaaagga tgctccagca cctgaaaaga aagatccata 360
tgacgggtcta aagttttgga atgttgactt aagggaaaag tttagtttgg aactt 415
```

<210> SEQ ID NO 441

<211> LENGTH: 409

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype 42 (6802-7210/409 bp)

<400> SEQUENCE: 441

```
tatatgttgg ggaaatcagc tatttttaac tgtggttgat actaccgta gtactaacat 60
gacttttgtt gccactgcaa catctggatg tacatatata gctgctaatt ttaaggaata 120
tttaagacat gctgaagaat atgatgtgca atttatattt caattgtgta aaataacatt 180
```

| | |
|--|-----|
| aactgttgaa gttatgtcat atatacacia tatgaatcct aacatattag aggagtggaa | 240 |
| tgttgggtgtt gcaccaccac cticaggaac tttagaagat agttataggt atgtacaatc | 300 |
| agaagctatt cgctgtcagg ctaaggtaac aacgccagaa aaaaaggatc ctatttcaga | 360 |
| cttttggttt tgggaggtaa atttatctga aaagttttct actgattta | 409 |

<210> SEQ ID NO 442

<211> LENGTH: 415

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype 43 (21-435/415 bp)

<400> SEQUENCE: 442

| | |
|---|-----|
| catttgtttt gggaatcagt tgtttgttac agtggtagat accactcgta gtacaaactt | 60 |
| gacgttatgt gccctactgt accctactgt gcccagtaca tatgacaatg caaagtttaa | 120 |
| ggaatacttg cggcatgttg agaatatga tctgcagttt atatttcaat tatgcataat | 180 |
| aacgctaaac ccagaggtta tgacatatat tcatactatg gatcccacat tattagagga | 240 |
| ctggaatttt gggtgtgtccc cacctgccctc tgcttctttg gaagatactt atcgcttttt | 300 |
| gtctaacaag gccattgcat gtcaaaaaaa tgcctcccca aaggaaagg aggatcccta | 360 |
| taaaaagtat acattttggg atataaatct tacagaaaag ttttctgcac aactt | 415 |

<210> SEQ ID NO 443

<211> LENGTH: 415

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype 44 (6647-7061/415 bp)

<400> SEQUENCE: 443

| | |
|---|-----|
| tatttgttgg ggaaatcagt tatttgttac tgtttagat actaccgta gtacaaacat | 60 |
| gacaatatgt gctgccacta cacagtcccc tccgtctaca tatactagtg aacaatataa | 120 |
| gcaatacatg cgacatgttg aggagttaga cttaacaatt atgtttcaat tatgtagtat | 180 |
| taccttaacg gcggaggtaa tggcctatct tcatactatg aatgctggta ttttagaaca | 240 |
| gtggaacttt ggggtgtcgc cgccccaaa tggtaacctta gaggacaaat acagatatgt | 300 |
| gcagtcccag gccattacat gtcaaaagcc accccctgaa aaggcaaagc aggaccctta | 360 |
| tgcaaaatta agtttttggg aggtggatct tagagaaaag ttttctagtg agttg | 415 |

<210> SEQ ID NO 444

<211> LENGTH: 415

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype 45 (6582-6996/415 bp)

<400> SEQUENCE: 444

```
tatttgttgg cataatcagt tgtttgttac tgtagtggac actaccgcga gtactaattt    60
aacattatgt gccctctacac aaaatcctgt gccaaagtaca tatgacccta ctaagtttaa    120
gcagtatagt agacatgttg aggaatatga tttacagtitt atttttcagt tgtgcactat    180
tactttaact gcagagggtta tgtcatatat ccatagtatg aatagtagta tattagaaaa    240
ttggaatttt ggtgtccctc caccacctac tacaagtttg gtggatacat atcgttttgt    300
gcaatcagtt gctgttacct gtcaaaagga tactacacct ccagaaaagc aggatccata    360
tgataaatta aagttttgga ctgttgacct aaaggaaaaa ttttcctccg atttg        415
```

<210> SEQ ID NO 445

<211> LENGTH: 412

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype 51 (6486-6897/412 bp)

<400> SEQUENCE: 445

```
catttgctgg aacaatcagc tttttattac ctgtgttgat actaccagaa gtacaaattt    60
aactattagc actgccactg ctgcggtttc cccaacattt actccaagta actttaagca    120
atatattagg catggggaag agtatgaatt gcaatttatt tttcaattat gtaaaattac    180
tttaactaca gaggtaatgg cttatttaca cacaatggat cctaccattc ttgaacagtg    240
gaattttgga ttaacattac ctccgtctgc tagtttgag gatgcatata ggtttgttag    300
aaatgcagct actagctgtc aaaaggacac cctccacag gctaagccag atcctttggc    360
caaataaaa ttttgggatg ttgatttaaa ggaacgattt tcittagatt ta            412
```

<210> SEQ ID NO 446

<211> LENGTH: 409

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype 52 (6623-7031/409 bp)

<400> SEQUENCE: 446

| | |
|--|-----|
| catatgttgg ggcaatcagt tgtttgtcac agttgtggat accactcgta gcactaacat | 60 |
| gactttatgt gctgagggtta aaaaggaaag cacatataaa aatgaaaatt ttaaggaata | 120 |
| ccttcgicai ggcgaggaat ttgatttaca atttattttt caattgtgca aaattacatt | 180 |
| aacagctgat gttatgacat acattcataa gatggatgcc actatittag aggactggca | 240 |
| atttggcctt accccaccac cgtctgcac tttggaggac acatacagat ttgtcacttc | 300 |
| tactgctata acttgtcaaa aaaacacacc acctaaagga aaggaagatc ctttaaagga | 360 |
| ctatatgttt tgggagggtgg attttaaaga aaagttttct gcagattta | 409 |

<210> SEQ ID NO 447

<211> LENGTH: 409

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype 53 (6614-7022/409 bp)

<400> SEQUENCE: 447

| | |
|---|-----|
| catctgttgg aacaatcagt tatttgtaac tgttgtggat accaccagga atacaaacat | 60 |
| gactctttcc gcaaccacac agtctatgtc tacatataat tcaaagcaaa ttaaacagta | 120 |
| tgtagacat gcagaggaat atgaattaca atttgtgttt caactatgta aaatatccct | 180 |
| gtctgctgag gttatggcct atttacatac tatgaattct accttactgg aagactggaa | 240 |
| tataggtttg tcgcctcctg ttgccactag cttagaggac aaatacagat atgtgaaaag | 300 |
| tgcagctata acctgtcaaa aggatcagcc cctcctgaa aagcaggacc cactatctaa | 360 |
| atataaattt tgggagggtca atttgcaaaa cagtttttct gctgatttg | 409 |

<210> SEQ ID NO 448

<211> LENGTH: 412

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype 54 (6561-6972/412 bp)

<400> SEQUENCE: 448

| | |
|---|-----|
| tatttgttgg ggcaatcagg tgtttttaac agttgtagat accacccgta gtactaacct | 60 |
| aacatttgtt gctacagcat ccacgcagga tagctttaat aattctgact itaggagta | 120 |
| tattagacat gtggaggaat atgatttaca gtttatattt cagttatgta ccataaccct | 180 |
| tacagcagat gttatggcct atattcatgg aatgaatccc actattctag aggactggaa | 240 |
| ctttggtata acccccccag ctacaagtag tttggaggac acatataggt ttgtacagtc | 300 |

| | |
|---|-----|
| acaggccatt gcatgcaaaa agaataatgc cccigcaaag gaaaaggagg atccttacag | 360 |
| taaatttaatt ttttggactg ttgaccttaa ggaacgattt tcatctgacc tt | 412 |

<210> SEQ ID NO 449

<211> LENGTH: 415

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype 55 (6647-7061/415 bp)

<400> SEQUENCE: 449

| | |
|--|-----|
| tatttggttg gggaatcagt tatttggttac tgttgtagat actacacgta gtacaaacat | 60 |
| gacaatatgt gctgctacaa ctgagctccc atctacaaca tataatagta cagaatataa | 120 |
| acaatacatg cgacatgttg aggagtttga cttacagttt atgtttcaat tatgtagtat | 180 |
| taccttaact gctgaggtaa tggcctatit acataccatg aatcctggta ttttgggaaca | 240 |
| gtggaacttt gggttgtcgc ccccccaaa tgggtacctta gaagacaaat acagatatgt | 300 |
| gcagtcacag gccattacat gtcaaaagcc tccccctgaa aaggcaaagc aggacccta | 360 |
| tgcaaaatta agtttttggg aggtagatct cagagaaaag ttttctagt agtta | 415 |

<210> SEQ ID NO 450

<211> LENGTH: 409

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype 56 (6559-6967/409 bp)

<400> SEQUENCE: 450

| | |
|--|-----|
| catttgctgg ggtaatcaat tatttggttac tgtagtagat actactagaa gtactaacat | 60 |
| gactattagt actgctacag aacagttaag taaatatgat gcacgaaaaa ttaatcagta | 120 |
| cccttagacat gtggaggaat atgaattaca atttggtttt caattatgca aaattacttt | 180 |
| gtctgcagag gttatggcat atttacataa tatgaatgct aacctactgg aggactggaa | 240 |
| tattgggtta tccccgccag tggccaccag cctagaagat aaatatagat atgttagaag | 300 |
| cacagctata acatgtcaac gggaacagcc accaacagaa aaacaggacc cattagctaa | 360 |
| atataaattt tgggatgtta acttacagga cagtttttct acagacctg | 419 |

<210> SEQ ID NO 451

<211> LENGTH: 409

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype 58 (6608-7016/409 bp)

<400> SEQUENCE: 451

```
catttgctgg ggcaatcagt tatttgttac cgtgggtgat accactcgta gcactaatat 60
gacattatgc actgaagtaa ctaaggaagg tacatataaa aatgataatt ttaaggaata 120
tgtacgtcat gttgaagaat atgacttaca gtttgttttt cagctttgca aaattacact 180
aactgcagag ataatgacat atatacatat tatggattcc aatattttgg aggactggca 240
atttggttta acacctcctc cgtctgccag ttacaggac acatatagat ttgttacctc 300
ccaggctatt acttgccaaa aaacagcacc ccctaaagaa aaggaagatc cattaaataa 360
atatactttt tgggagggtta acttaaagga aaagttttct gcagatcta 409
```

<210> SEQ ID NO 452

<211> LENGTH: 415

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype 59 (6571-6985/415 bp)

<400> SEQUENCE: 452

```
tatatgttgg cacaatcaat tgtttttaac agttgtagat actactcgca gcaccaatct 60
ttctgtgtgt gcttctacta cttcttctat tcctaagtga tacacaccta ccagittttaa 120
agaatatgcc agacatgtgg aggaatttga ttgacagttt atatttcaac tgtgtaaaaat 180
aacattaact acagaggtaa tgcatacat tcataatatg aataccacta ttttggagga 240
ttggaatttt ggtgttacac cacctcctac tgctagttta gttgacacat accgttttgt 300
tcaatctgct gctgtaactt gtcaaaagga caccgcaccg ccagttaaac aggaccctta 360
tgacaaacta aagttttggc ctgtagatct taaggaaagg ttttctgcag atctt 415
```

<210> SEQ ID NO 453

<211> LENGTH: 415

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype 61 (6732-7146/415 bp)

<400> SEQUENCE: 453

```
tatttggttg tttaatgaat tgtttgtaac cgttgttgat accaccgcga gtactaattt 60
```

| | |
|--|-----|
| aaccatttgt actgctacat cccccctgt atctgaatat aaagccacaa gcitttaggga | 120 |
| atatttgcgc catacagagg agtttgattt gcaatttatt tticagttaa gtaaaataca | 180 |
| tttaaccctt gaaattatgg cctacctaca taatatgaat aaggccttgt tggatgactg | 240 |
| gaactttggg gtgggtaccac caccctctac cagtttagaa gacacatata ggtttttgca | 300 |
| gtccagagct attacatgtc agaagggtgc tgcigccccg ccgccaagg aggatcgcta | 360 |
| tgccaagtta tccitttggg ctgttgattt acgagacaag ttttccactg atttg | 415 |

<210> SEQ ID NO 454

<211> LENGTH: 409

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype 62 (21-429/409 bp)

<400> SEQUENCE: 454

| | |
|--|-----|
| tatttgttgg tttaatgaac tgtttgttac tgtgttgat actaccagaa gtactaat | 60 |
| tactatttgt accgcctcca ctgctgcagc agaatacacg gctaccaact ttagggaatt | 120 |
| tttgcgacac acggaggaat ttgatttgca atttatattt caattgtgca aaatacagtt | 180 |
| aacccccgaa attatggcct acctgcataa tatgaacaag gaccttttgg atgactggaa | 240 |
| ctttgggggt ttacctcccc ctccactag tttagatgag acatatcact atttcgagtc | 300 |
| tcgggctatt acatgtcaaa gggggctgcc taccgctccc aagggtggacc cgtatgcgca | 360 |
| aatgacattt tggactgtgg atcttaagga caagttgtct actgatttg | 409 |

<210> SEQ ID NO 455

<211> LENGTH: 409

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype 66 (6609-7017/409 bp)

<400> SEQUENCE: 455

| | |
|---|-----|
| catatgctgg ggtaatcagg tatttgttac tgttgtgat actaccagaa gcaccaacat | 60 |
| gactattaat gcagctaaaa gcacattaac taaatatgat gcccgtagaa tcaatcaata | 120 |
| ccttcgccat gtggaggaat atgaactaca gtttgtgttt caactttgta aaataacctt | 180 |
| aactgcagaa gttatggcat atttgcataa tatgaataat actttattag acgattggaa | 240 |
| tattggctta tccccaccag ttgcaactag cttagaggat aaatataggt atattaaaag | 300 |
| cacagctatt acatgtcaga gggaacagcc ccttcagaa aagcaggatc ccttggttaa | 360 |
| atataagttt tgggaagtta atttacagga cagcttttct gcagacctg | 409 |

<210> SEQ ID NO 456

<211> LENGTH: 409

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype 67 (6584-6992/409 bp)

<400> SEQUENCE: 456

```
tatatgctgg ggtaatcaaa tatttggtac tgttgtagac actacacgta gtaccaacat    60
gactttatgt tctgaggaaa aatcagaggc tacatacaaa aatgaaaact ttaaggaata    120
ccttagacat gtggaagaat atgatttgca gtttatattt cagctgtgca aaatatccct    180
tactgcaaat gttatgcaat acatacacac catgaatcca gatataattag aggactggca    240
atttggcctt acaccacctc cttcaggtaa ttacaggac acatatagat ttgttaccic    300
gcaggctatt acctgtcaaa aaacatcccc tccaacagca aaggaagatc ctcttaaaaa    360
gtacagtttt tgggaaatca atttaaagga aaaattttct gcagattta    409
```

<210> SEQ ID NO 457

<211> LENGTH: 415

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype 68 (2582-2996/415 bp)

<400> SEQUENCE: 457

```
tatttggttg cataatcaat tatttcttac tgttgtggat accactcgca gtaccaattt    60
tactttgtct actactactg aatcagctgt accaaatatt tatgacccta ataaatttaa    120
ggaatatatt aggcatgttg aggaatatga ttgcaattt atatttcagt tgtgtactat    180
aacattgtcc actgatgtaa tgtcctatat acatactatg aatcctgcta ttttggatga    240
ttggaatttt ggtgttgccc ctccaccatc tgctagtctt gtagatacat accgctatct    300
gcaatcagca gcaattacat gtcaaaaaga cgccccigca cctactaaa aggatccata    360
tgatggctta aacttttgga atgtaaattt aaaggaaaag tttagtcttg aactg    415
```

<210> SEQ ID NO 458

<211> LENGTH: 415

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype 69 (6509-6923/415 bp)

<400> SEQUENCE: 458

```
catttgttgg ggcaaccaat tgtttgttac ttgtgtagat actaccgcga gtaccaacct 60
cactattagt actgtatctg cacaatctgc atctgccact tttaaacat cagattataa 120
gcagtttata aggcatggig aggaatatga attacagttt atatttcaat tgtgtaaaat 180
tactcttacc actgatgtaa tggcctatat ccatacaatg aattctacta ttttggaaaa 240
ttggaatttt ggcccttacct tgcctcctac tgctagtttg gaagatgcat ataggtttat 300
taaaaattca gctactacat gtcaacgcga tggccctgca cagcccaagg aggatccatt 360
tagtaaatta aaattttggg acgttgatct taaagaaaag ttttctattg attta 415
```

<210> SEQ ID NO 459

<211> LENGTH: 415

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype 70 (6549-6963/415 bp)

<400> SEQUENCE: 459

```
catttgttgg cataaccagt tgittattac tgtggtggac actacacgta gtactaattt 60
tacattgtct gccctgcaccg aaacggccat acctgctgta tatagcccta caaagtttaa 120
ggaatatact aggcatgtgg aggaatatga tttaaatatt atatttcaat tgtgtactat 180
cacattaact gctgacgtta tggcctacat ccatactatg aatcctgcaa ttttggacaa 240
ttggaatata ggagttaccc ctccaccatc tgcaagcttg gtggacacgt ataggttatt 300
acaatcagca gctatagcat gtcaaaagga tgctcctaca cctgaaaaaa aggatcccta 360
tgacgattta aaattttgga atgttgattt aaaggaaaag tttagtacag aacta 415
```

<210> SEQ ID NO 460

<211> LENGTH: 415

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype 72 (6758-7172/415 bp)

<400> SEQUENCE: 460

```
catctgttgg tttaatgagc tttttgtgac agttgtagat actactcgca gtactaatgt 60
aactatttgt actgccacag cgtcctctgt atcagaatat acagcttcta attttcgtga 120
gtatcttcgc cacactgagg aatttgattt gcagtttata tttcaactgt gtaaaattca 180
```

| | |
|---|-----|
| cttaactcct gaaattatgg cclacttgca caatatgaat aaggccttat tggatgactg | 240 |
| gaattttggt gtgggtgcctc ctccttctac cagtttggat gataacctata ggtttttgca | 300 |
| gtctcgtgcc attacctgtc aaaaggggggc tgccaccctt cctcctaaag aagatccata | 360 |
| tgctaactta tccttttggga ctgtggattt aaaggacaaa ttttccactg acttg | 415 |

<210> SEQ ID NO 461

<211> LENGTH: 415

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype 74 (1613-2027/415 bp)

<400> SEQUENCE: 461

| | |
|---|-----|
| tatttgttgg ggtaatcaat tatttgttac agttgtggat accacacgca gtactaacat | 60 |
| gactgtgtgt gctcctacct cacaatcgcc ttctgctaca tataatagtt cagactacaa | 120 |
| acaatacatg cgacatgtgg aggaatttga ttgtcaattt atttttcaat tatgtagtat | 180 |
| taagttaact gctgaggtta tggcctatat tcatactatg aatcctacag ttttagaaga | 240 |
| gtggaacttt gggctaacgc cccccccaa tggctacttta gaagacacct acagatatgt | 300 |
| gcagtcccag gctattacat gtcaaaaacc tacgcctgat aaagcaaagc ccaatcccta | 360 |
| tgcaaattta agtttttggg aagttaatct taaggaaaag ttttctagtg aatta | 415 |

<210> SEQ ID NO 462

<211> LENGTH: 415

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype 82 (6536-6950/415 bp)

<400> SEQUENCE: 462

| | |
|---|-----|
| catttgctgg aataatcagc tttttattac ttgtgttgac actactaaaa gtaccaattt | 60 |
| aaccattagc actgctgtta ctccatctgt tgcacaaaca ttactccag caaactttta | 120 |
| gcagtacatt aggcatgggg aagaatatga attgcaattt atatttcaat tgtgtaaaat | 180 |
| cactttaact actgaaatta tggcctacct gcacaccatg gattctacaa ttttagaaca | 240 |
| gtggaatttt ggattaacat tgccccctc cgctagtttg gaggatgcct atcgatttgt | 300 |
| aaaaaatgca gcaacatcct gtcacaagga cagtcctcca caggctaaag aagacccttt | 360 |
| ggcaaaatat aaattttgga atgtagacct taaggaaacgc ttttcttttg atttg | 415 |

<210> SEQ ID NO 463

<211> LENGTH: 412

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype CP8061 (21-432/412 bp)

<400> SEQUENCE: 463

```
catttggttg ggcaatcagc tttttgtaac agttgtggac acatcacgta gtacaaatat    60
gtccatctgt gctacaaaaa ctgttgagtc tacatataaa gcctctagtt tcatggaata    120
tttgagacat ggagaagaat ttgatttgca atttatattt caactatgtg ttattaattt    180
aacagctgaa attatggcct acttacatcg catggatgct acattactgg aggactggaa    240
tttttggttc ttaccacctc ctactgctag tcttggtgat acctaccgct ttttacagtc    300
tcaggccata acctgtcaga aaaacagtc tcttcttgca gaaaaaaagg acccctatgc    360
agatccttaca ttttgggagg tggatttaaa ggagcggitt tcactagaat tg          412
```

<210> SEQ ID NO 464

<211> LENGTH: 412

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype CP8304 (21-432/412 bp)

<400> SEQUENCE: 464

```
tatttggttg tttaatgaaa tgtttggtac agtgggtggat actaccagaa gcaccaattt    60
tactatttgc acagctacat ctgctgctgc agaatacaag gcctctaact ttaaggaatt    120
tctgcgccat acagaggaat atgatttgca gtttattttc caattatgta aaatacagtt    180
aacaccagaa attatggcct acttacataa tatgaacaag gcactgttgg atgattggaa    240
ttttggtgtg ttgccacctc cttccaccag tttagatgac acatatcgct ttttacagtc    300
tcgggccatt acctgtcaaa aggggtgctgc tgcccctgcg cccaaagagg acccttatgc    360
cgacatgtca ttttggacag ttgaccttaa ggacaagtig tctactgatt tg          412
```

<210> SEQ ID NO 465

<211> LENGTH: 350

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype L1AE5 (11-360/350 bp)

<400> SEQUENCE: 465

| | |
|--|-----|
| ggcacaacca attatttata actgtggttag acacaacacg tagtaccaat cttaccttat | 60 |
| ctactgcaac tactaatcca gttccatcta tatatgaacc ttctaaattt aaggaataca | 120 |
| cacgccatgt agaggaatat gatttacaat ttatatattca attgtgtaaa attacactta | 180 |
| ctactgatgt tatgtcittat atacataaca tggatcctac tatttttagat agttggaatt | 240 |
| ttgggtgttag tcttccccca tctgctagct tagtagatac atataggittt ttacagtcatt | 300 |
| ctgccattac atgtcagaag gatgtggttg ttccacaaaa aaaggatcca | 350 |

<210> SEQ ID NO 466

<211> LENGTH: 415

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype MM4 (21-435/415 bp)

<400> SEQUENCE: 466

| | |
|---|-----|
| catttgctgg aataatcagc tttttattac ttgtgttgac actactagaa gtaccaattt | 60 |
| aaccattagc actgctgtta ctcaatctgt tgcacaaaca ttactccag caaacittaa | 120 |
| gcaatacatt aggcatgggg aagaatatga attgcaattt atatttcaat tgtgtaaaat | 180 |
| cactttaact actgaaatta tggcttacct gcacaccatg gattctacaa ttttagaaca | 240 |
| gtggaatttt ggattaacct tgccccctc agctagtittg gaggatgcct atcgatttgt | 300 |
| aaaaaatgca gcaacatcct gtcacaagga cagtcctcca caggctaaac aagacccttt | 360 |
| ggcaaaatat aaattttgga atgtagacct taaggaacgc ttttctttgg atttg | 415 |

<210> SEQ ID NO 467

<211> LENGTH: 412

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype MM7 (21-432/412 bp)

<400> SEQUENCE: 467

| | |
|---|-----|
| catttgttgg tttaatgagt tatttgttac agttgtagat actaccgca gtaccaatat | 60 |
| tactatttca gctgctgcta cacaggctaa tgaatacaca gcctctaact ttaaggaata | 120 |
| cctccgccac accgaggaat atgacttaca ggttatattg caactttgca aaatacatct | 180 |
| taccctgaa attatggcat acctacatag tatgaatgaa catttattgg atgagtggaa | 240 |
| ttttggcgtg ttaccacctc ctccaccag ccttgatgat acctatcgct atctgcagtc | 300 |
| ccgtgctatt acctgccaaa agggtccttc cgccccgcc cctaaaaagg atccttatga | 360 |

tggccttgta ttttgggagg ttgattttaa ggacaaacta tccacagatt tg

412

<210> SEQ ID NO 468

<211> LENGTH: 412

<212> TYPE: DNA

<213> ORGANISM: Human Papilloma Virus subtype MM8 (21-432/412 bp)

<400> SEQUENCE: 468

| | |
|---|-----|
| tatatgctgg tttaatcaat tgtttgtcac ggtggtggat accacccgca gcaccaat | 60 |
| tactattagt gctgctacca acaccgaatc agaataataa cctaccaatt ttaaggaata | 120 |
| cctaagacat gtggaggaat atgatttgca gtttatattc cagtgtgta aggtccgtct | 180 |
| gactccagag gtcatgtcct atttacatac tatgaatgac tccttattag atgagtggaa | 240 |
| ttttggtgtt gtgccccctc cctccacaag tttagatgat acctataggt acttgcagtc | 300 |
| tgcgcccatt acttgccaaa agggggccgc cgccgccaag cctaaggaag atccttatgc | 360 |
| tggcatgtcc ttttgggatg tagattttaa ggacaagttt tctactgatt tg | 412 |

<210> SEQ ID NO 469

<211> LENGTH: 15

<212> TYPE: DNA

<213> ORGANISM: Artificial Sequence

<220> FEATURE:

<223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
oligonucleotide

<400> SEQUENCE: 469

tttttttttt ttttt

15

<210> SEQ ID NO 470

<211> LENGTH: 21

<212> TYPE: DNA

<213> ORGANISM: Artificial Sequence

<220> FEATURE:

<223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic

oligonucleotide

<400> SEQUENCE: 470

gcccagactg tgggtggcag

20

<210> SEQ ID NO 471

<211> LENGTH: 21

<212> TYPE: DNA

<213> ORGANISM: Artificial Sequence

<220> EEATURE:

<223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
oligonucleotide

<400> SEQUENCE: 471

ccaccaactg cttagcacc c

21

<210> SEQ ID NO 472

<211> LENGTH: 20

<212> TYPE: DNA

<213> ORGANISM: Artificial Sequence

<220> EEATURE:

<223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
oligonucleotide

<400> SEQUENCE: 472

tgcagcgtac tccccacatc a

21